

\$3.50 Philadelphia
\$3.25 Chester
\$3.00 Wilmington
 AND RETURN
Sunday, June 18
 SPECIAL TRAIN
 Eastern Standard Time
 Leaves Washington (Union Station)
 7:30 AM
 Arrives Wilmington 10:05 AM, Chester
 10:25 AM, Philadelphia 10:50 AM
 Returns: Leaves Broad Street Station
 7:30 PM, West Philadelphia, 7:55 PM,
 Chester 8:15 PM, Wilmington 8:45 PM.
 Tickets on sale Friday preceding excursion.

Pennsylvania
System
 The Route of the Broadway Limited

BY RADIO TODAY

Complete Programs of Radio Broadcasting Stations.

NAA—Naval Radio Station, Radio, Va.
 10:30 a.m.—Meteorological report on 5,950 meters of arc transmitter.
 Noon and 10 p.m.—Time signal, followed by weather report and ship orders.
 10:30 p.m.—Naval press news; wave length, 2,650 meters.

WWX—Post Office Department.
 10 a.m.—Weather report for the District of Columbia, Pennsylvania, Maryland, Virginia and West Virginia.
 10:30 a.m.—Marketgram (fruit and vegetables) on 1,100 meters.
 12:30, 2, 3 and 3:30 p.m.—C. W. Marketgram telegrams on 1,980 meters.
 4 p.m.—Wholesale dairy report on 1,160 meters by radiophone.
 7:30 and 8 p.m.—Market report on 1,160 meters by radiophone.
 9:50 p.m.—Weather report.

WUU—Doubleday and Hill Electric Company (360 Meters).
 4:30 to 5:30 p.m.—Base ball scores. Program of music as follows: "Poor Carnation" (Anon.); "Song Without Words" (Mendelssohn); "Barbiere D'Seville" (Rossini); "California" fox trot (Friend-Comrad); "Beauty's Eyes" (Lillo) (Tosti); "Carolina Rolling Stones" (Farish-Younge-Squires); "Poor Little Me" (Benny Davis); "Traumerei" (Schumann); "Blue Bird Land" (Short); "Oh Dry Thine Tears" (Del-Riego); "One, Two, Three, Four" (Anon.); "Sing Song Man" (Friend-Comrad); "The Blue Bird" (Anon.); "Earth" (Wrightson); "Mummy Lou" (Sterling-Horan-Von Tilzer); "By the Sapphire Sea" (Snyder); "Meditation" (Hammon); "Pick Me Up and Lay Me Down" (Kalmar Ruby); base ball scores announced.

WPM—Thomas J. Williams, Inc. (360 Meters).
 12:30 p.m.—News items; reports on stolen automobiles.
WJH—White Motor Company (360 Meters).
 7:45 p.m.—Program of music under direction of Theodore Hoffman:

PIANO SOLOS.
 "Rustle of Spring".....Sinding
 "Rhapsody in Blue".....MacDowell
 "Polonaise in A Flat".....Chopin
 Adolph Torovsky, organist, Epiphany Church.

VOCAL SOLOS.
 "I Love the Moon".....Rubens
 "The Black Swan".....MacDowell
 "Old Black Swan".....Postel
 Olive Swan, mezzo-soprano.
 Albert W. Harned at the piano.

VOCAL SOLOS.
 "Spirito Gentile" (La Favorita).....Donizetti
 "Alone in Love's Garden".....Hewitt
 "When Love Comes".....Slater
 Warren L. Terry, tenor.

ADDRESS.
 "Hobby Riders in History".....C. Francis Jenkins.

VIOLIN SOLOS.
 "Romance".....Vieuxtemps
 "L'Espresso".....Godeard
 Norman L. Goldman.

VOCAL SOLOS.
 "Aspiration".....Cox
 "I Know a Lovely Garden".....Hewitt
 "Wedding Morn".....Dichmont
 Miss Swann.

Mr. Harned accompanying.
3YN—National Radio Institute (360 Meters).
 6:30 to 7 p.m.—Radio spark code.

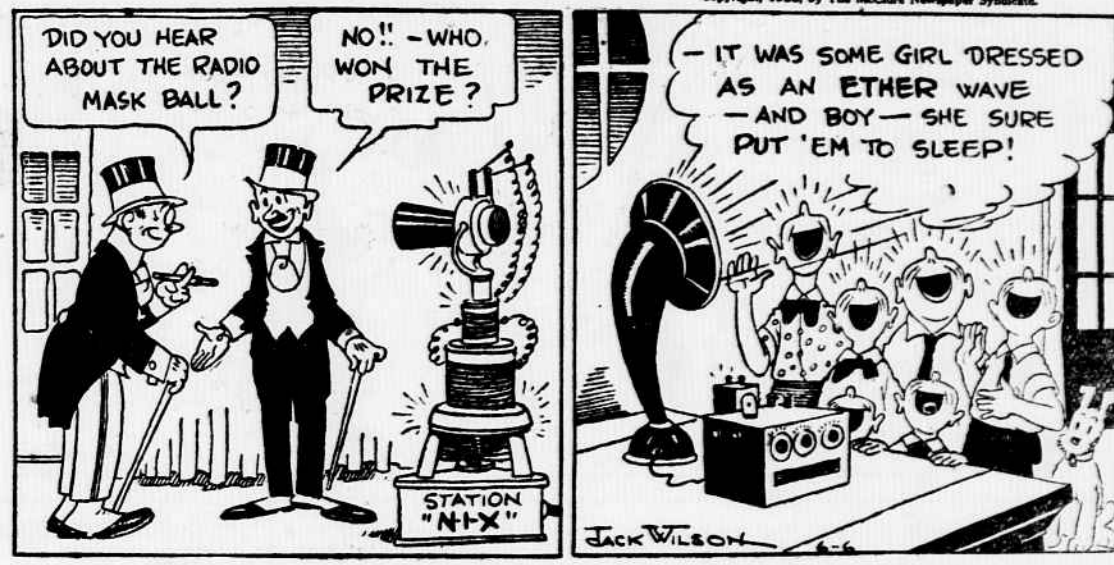
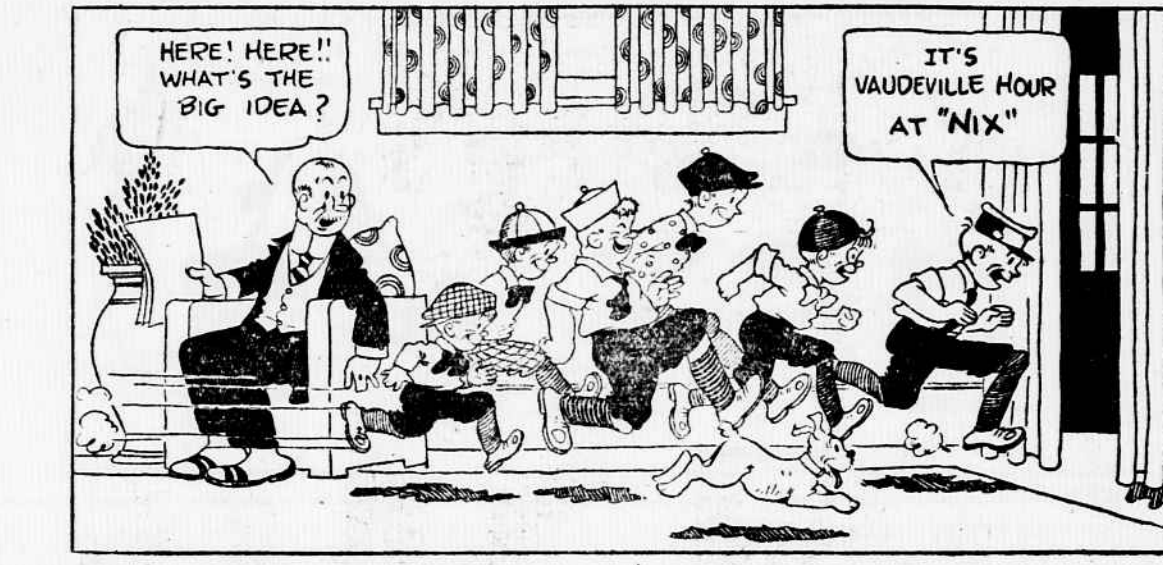
WVP—U. S. Signal Corps, Fort Wood, N. Y. (1,450 Meters).
 8:30 p.m.—Instruction in radio.
 9 p.m.—Concert by Katherine Platt Gunn, violin; Virginia Lookamp, contralto; Maude C. Applebit, soprano; William O. G. Jones, baritone, and S. L. Jankvist, tenor.

WWJ—Wanamaker's, New York City (360 Meters).
 1:15 to 2:15 p.m.—Music and children's stories.
 7:30 to 9 p.m.—Music and children's stories.

WGI—Amrad, Medford Hills, Mass. (360 Meters)—Eastern Daylight-Saving Time—Deduct One Hour.
 2:55 p.m.—News and music.
 7:30 p.m.—News and music.

WWJ—Detroit News (Eastern Standard Time).
 9:30 a.m.—Tonight's dinner and household hints (360 meters).
 9:40 a.m.—Music (360 meters).
 10:15 a.m.—Weather report (485 meters).
 11:55 a.m.—United States Naval Observatory time signals relayed by telegraph (360 meters).
 12:30 p.m.—Music (360 meters).
 3:30 p.m.—Weather report (485 meters).
 3:40 p.m.—Market quotations (360 meters).
 6 p.m.—Complete sport results; world news (360 meters).
 8:30 p.m.—Concert by Detroit News.

RADIO RALF—



Expert Advice on Radio

No. 20.—The Vacuum Tube—How It Works.

BY A. HYATT VERRILL.

Expert on Radio Technology.

Before taking up the matter of tube sets it is a good plan to know something about this wonderful device, why and how it works. It is the vacuum tube or audion bulb which has made radio telephony practical, and to many persons this is a mysterious and perplexing device. But in order to understand the functions and principles of the tube we must have a thorough knowledge of the underlying principles of electricity. First of all, we must totally discard a lot which we formerly thought we knew about electricity. Not many years ago everybody, including electrical engineers and the greatest scientists, thought that electricity flowed very much like some sort of gas or water. We even spoke of it as the "electric fluid." We spoke of measurements of electricity as compared with measurements of water, and we thought that the force, or whatever it was, ran through a wire very much as water runs through a pipe. Today, however, this is changed. We know now that electricity is not a fluid, but merely the movement of countless infinitely small things known as electrons. According to late discoveries, everything in the universe is composed of electrons. These are far smaller than atoms, which formerly were thought to be the smallest possible division of mat-

ter, but an electron beside an atom resembles a tiny birdshot as compared to a huge push ball. Ordinarily, every substance and everything in the universe contains a definite number of electrons, and as long as the material or substance, whether it is water, metal, wood or the human body, contains its normal number of electrons they revolve in definite little orbits, like miniature solar systems. If a certain number of electrons are taken from any substance, there is a strong tendency for electrons from some other substance to fly to it. On the other hand, if electrons are added to any substance there is an equally strong tendency for the superfluous electrons to leave.

Interchange of Electrons.

If a substance in which the normal quantity of electrons has been increased is placed near a substance from which electrons have been taken, there is an instantaneous exchange of electrons, those from the overloaded matter flying to the matter lacking in electrons. This interchange continues until the normal quantity in each substance or object results. When a substance is overloaded or overcharged, it is known as a negative body, and if undersupplied or lacking in electrons it is a positive body. Electricity or electrical force, as we know it, is merely this interchange of electrons between a negative and a positive body or pole. If we produce electrical currents by means of a dynamo we merely take electrons from one object and add them to another, the interchange pro-

ducing the flood of countless billions of electrons, which we call electricity. If we immerse a carbon and a zinc in a solution of certain chemicals and produce a battery we are simply arranging a device for taking electrons from one substance and adding them to another.

When the wires connected to these substances are placed close together the electrons, striving to get from the overloaded or negative object, leap across the gap to enter the underloaded or positive body, and create what we call a spark and an electrical current. So, you see, in reality our bodies, our clothes, the food we eat, the beds we sleep in, the rings on our fingers, the shoes on our feet, the ground we walk on, the water we drink, and even the air we breathe, are all electrically in a quiescent state. Moreover, all the energy in the universe, all heat, and, in fact, everything, is produced by this interchange of electrons, the particular form which the energy or movement of electrons takes depending upon whether it is mechanical, electrical, muscular or other force. Whenever an object is hot it is charged with far too many electrons, and these try their very best to escape and rush with the speed of light to some cold or cold body which has too few electrons. Heating or cooling a body adds to or detracts from the normal number of electrons in the body, and electric curling iron or a hot flatiron is constantly striving to throw off electrons, but, being in the atmosphere and surrounded by air, which is made up of atoms, each of which is thousands of times larger than the electrons, the tiny but energetic electrons meet with very little success. The atoms act like an almost solid wall, and prevent the electrons from going any distance from the heated body.

Vacuum Affects Electrons.

But if we should place an object in vacuum and heat it, the electrons, finding no resistance in the surround-

(Continued on Thirty-second Page)

KLONDIKE PIONEER DEAD.

George Carmack Was Reported Discoverer of Gold Fields.

VANCOUVER, B. C., June 6.—George Carmack, reported discoverer of the Klondike gold fields, died here last night. He was stricken last Friday with pneumonia. He was born in Contra Costa county, Calif., September 4, 1860. He kept twenty-two nuggets from the first two pans of gold he washed on Bonanza creek in the Klondike. These nuggets were made into a golden telegraph key, which was presented to President Taft in 1898 and used by him in opening the Alaska-Yukon exposition in Seattle.

LEGION'S MESSAGE READ.

LONDON, June 6.—H. N. Jackson of Burlington, Vt., on behalf of Commander Hamilton MacNider, yesterday read the American Legion's message of good will and comradeship to the first annual conference of the British Legion in session here.



Four Out of Every Five

Four people out of every five who pass the age of forty, and thousands younger, are marked by Pyorrhea for its victims.

Does that include you?

Startling as these figures are, they are accurate statistics which your dentist will verify.

When Pyorrhea comes, it does its deadly work quickly. It loosens the gums until they recede from the teeth, which drop out or must be pulled.

It forms sinister pus pockets at the roots of the teeth. Germs breed in these pockets, then swarm throughout the system.

Ill health often follows and serious sickness.

Don't sit idly by and wait for Pyorrhea's coming. At the first danger sign, tender or bleeding gums, consult your dentist and begin using Forhan's For the Gums.

If used consistently, and used in time, Forhan's will prevent Pyorrhea or check its deadly course. It is the formula of R. J. Forhan, D. D. S.

Use Forhan's as a dentifrice every day. Brush your teeth with it regularly. It keeps the teeth and gums in a clean, healthy condition.

Don't put off buying Forhan's until tomorrow. Remember—four out of five wait too long. 35c and 60c tubes at your druggist's.

Formula of R. J. Forhan, D. D. S.

Forhan Company, New York

Forhan's, Limited, Montreal

Forhan's
FOR THE GUMS
 Checks Pyorrhea

BRUSH YOUR TEETH WITH IT

Specialist in DISEASES OF THE MOUTH

PREPARED BY FORHAN PATENT DENTAL PROCESS

Amazing Results Prove MASTIN'S Vitamon Tablets Build Firm Flesh Quick

Beautify the Complexion and Increase Energy

Every Woman Who Longs For The Well-Rounded Figure, The Clear Skin And The Steady Nerves Of Perfect Health Owe It To Herself To Read Below Just What Truly Surprising Results Others Have Obtained From MASTIN'S Simple, Easy And Economical Way.

Thousands of women who only a short while ago were struggling along from day to day—weak, thin, nervous and run-down—are today enjoying the radiant health and youthful beauty which they had so often longed for yet little expected to attain.

Their secret—perhaps the greatest health and beauty secret of all time—may also be yours. No more staid and substantial proof of this great secret than you may expect from this great secret in your own case could be furnished than the voluntary words of countless men and women who have obtained such truly amazing results from the use of MASTIN'S Vitamon Tablets.

If you are thin and underdeveloped with ugly skin, flabby flesh and sunken cheeks, start this simple test yourself today: First weigh your body and measure yourself. Next take MASTIN'S Vitamon—two tablets with every meal. Then weigh and measure yourself again each week and continue taking MASTIN'S Vitamon Tablets regularly until you are satisfied with your gain in weight, energy, nerve force and improved appearance.

MASTIN'S Vitamon Tablets do not upset the stomach or cause that bloated feeling, but on the contrary are a great aid in correcting indigestion and improving the appetite.

Warning: For your own protection, and to save you MASTIN'S to get the Original and Genuine Vitamon Tablets recommended by physicians and used by millions for firm flesh and clear skin. Beware of imitations. You can get MASTIN'S at all good druggists, such as O'Donnell's Drug Stores and People's Drug Stores.

Why not have the graceful, well-rounded figure that wins admiration—the "pep" and glow of perfect health—instead of being thin, undeveloped, scrawny and lacking in energy? It will pay you well in good looks and better health to try MASTIN'S Vitamon Tablets for a short time and watch the surprising results. Success guaranteed or money back.

WHEN LAXATIVES FAIL IT WILL PAY YOU TO TRY CLAX

The New Intestinal Cleanser for Obsolete Constipation "More Than a Laxative"

CLAX Tablets are recommended and endorsed by the makers of MASTIN'S Vitamon Tablets.

if it MASTIN'S isn't VITAMON

The Worlds Standard Used by Millions

Tomorrow Is Our COUPON DAY

The incomparable once-a-month Bargain Event.

IT PAYS TO DEAL AT

Goldenberg's

BOTH SIDES OF 7TH AT K ST. "THE DEPENDABLE STORE"

See Page Opposite for Our Monthly COUPON SALE

Important Feature Events for Wednesday in

Women's and Misses' Summer Apparel

\$5 and \$6 Extra Size Summer Wash Dresses

\$2.95

Sizes 42½ to 52½

350 Stylish Stout Wash Dresses, of good quality voile, in attractive medium and dark patterns; flowered, figured and coin-spot voiles. Lace trimmed, tunic, overskirt, panelled and vestee styles. Full cut sizes from 42½ to 52½.

Goldenberg's—Second Floor.

Women's Coats and Wraps

Up to \$19.75 Values

\$9.75

75 Spring and Summer-weight Dress and Sport Coats and Capes, of Polaire Cloth, Velours, Checked and Plaid Coatings and Fancy Mixtures. Well-tailored models, in new sport effects, in full belted or loose back styles, circular and flowing capes, trimmed or plain.

All the popular shades; sizes for misses and women.

Goldenberg's—Second Floor.

Tweed Suits \$5

Jersey Suits

We advise all women to make the most of this sale, as we doubt if we can obtain any more of these suits after this sale is over.

All-wool Tweeds and Jersey Cloths, in periwinkle, brown, orchid, tan, blue, rose, tangerine, henna, sand and heather mixtures.

Tuxedo fronts, Peter Pan or notch collars, belted or unbelted models, with novelty pockets. Sizes for misses and women.

Goldenberg's—Second Floor.

Women's and Misses' Jersey Bathing Suits

Regular \$2.50 and \$2.98 Values

\$1.95

Cotton Jersey Bathing Suits, with bloomers attached; attractive models with black and white striped border at neck, armholes and skirt; finished with narrow belt. Sizes 36 to 46.

59c and 69c Bathing Caps, 35c

Odd lot of Rubber Bathing Caps, assorted styles, colors and sizes.

59c Bathing Slippers, 39c

Well made Bathing Slippers, with durable soles and uppers; black only; sizes 3 to 7.

Goldenberg's—Surf Dept., Second Floor.